CONCEPT 3: NEW MADRID EARTHQUAKES/ SEISMIC ZONE TOUR ROUTE

GOAL

This concept would establish an auto tour route to both illustrate the impact of the New Madrid earthquakes of 1811-1812, which were unique geological occurrences that dramatically altered the area's topography, and to explore the implications of this active seismic zone for the lower Mississippi Delta region today.

IMPORTANCE/SIGNIFICANCE

During the winter of 1811–1812, a series of earthquakes and after-shocks struck the mid-Mississippi River valley in the vicinity of New Madrid, Missouri, then the largest settlement on the banks of the Mississippi River between St. Louis, Missouri, and Natchez, Mississippi. The three strongest earthquakes occurred on December 16, 1811, and on January 23 and February 7, 1812, registering estimated magnitudes of 8.6, 8.4, and 8.7 on the Richter Scale, respectively (for comparison purposes, the San Francisco earthquake of 1906 registered 8.6). The earthquakes sent tremors rippling across the northeastern United States and parts of Canada, but nearer the New Madrid epicenter

> ...(t)he effects were awesome. The saturated bottom land soil spurted huge geysers of sand and water. During the main shocks the land heaved and buckled for minutes, trees were splintered, a prolonged roaring was heard and the air smelled of sulfur. According to one account, the after shocks were a constant trembling, "like the flesh of a beef just killed."....The effect of the third and strongest main shock on the Mississippi (River) itself was even more striking. As an eyewitness wrote, at "about 4 o'clock a.m. a concussion took place so much more violent than those which preceded it that it dominated the hard shock....At first the Mississippi seemed to recede from its banks...its waters gathering up like a mountain [only to fall] again with such violence that it took with it whole groves of young cotton wood trees which ledged its borders.... The river was literally covered with the wreckage of boats." The riverbed itself was so disturbed that two waterfalls (or at least rapids) were formed, one upstream from New Madrid and one downstream (Johnston 1982).

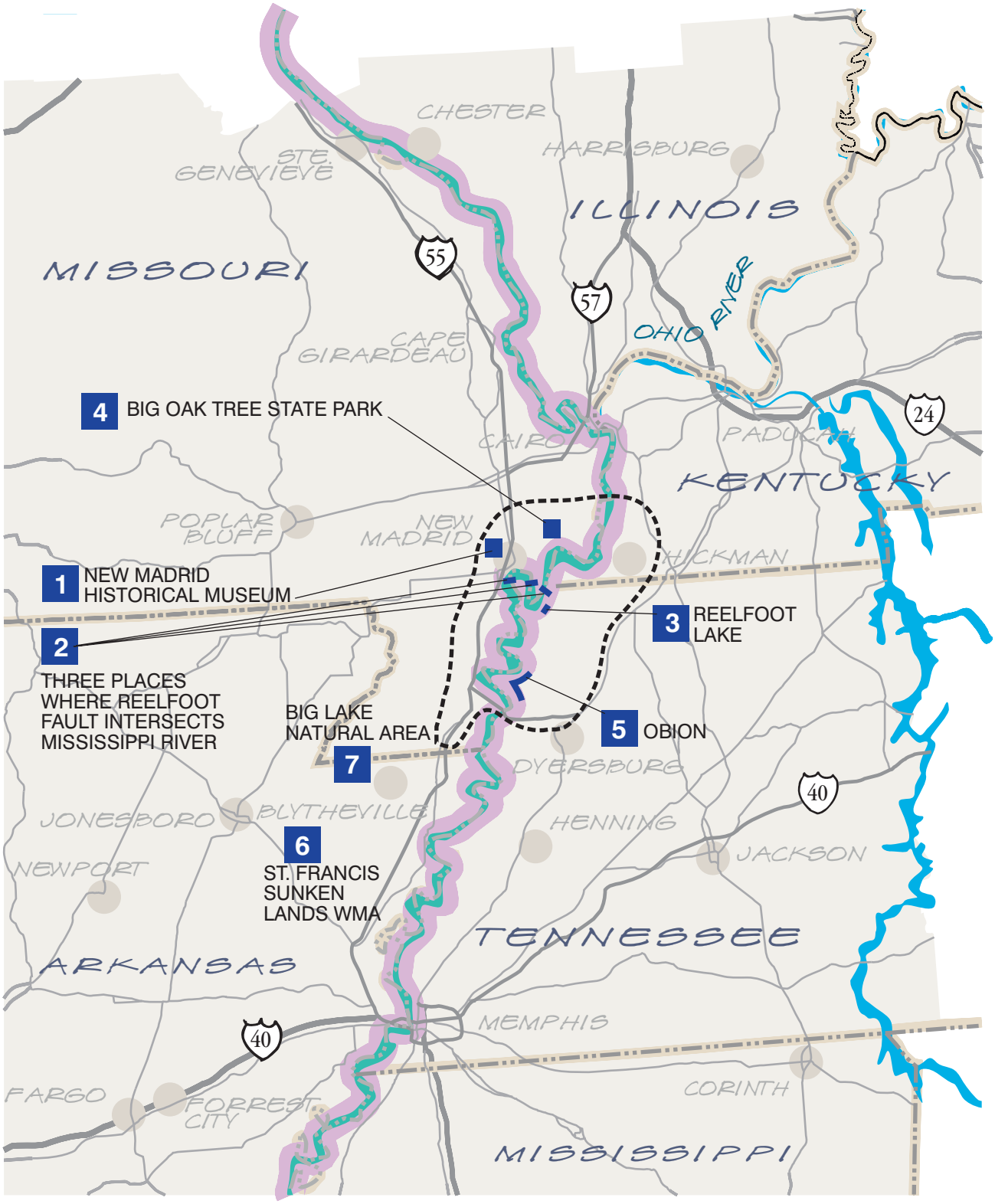
In addition to the fissuring and toppling of trees, historical, geological, and geophysical research has confirmed that the earthquakes also caused the caving of riverbanks, temporary waterfalls, barriers, and a brief retrograde wave along the Mississippi River; created sunken lakes, such as Reelfoot Lake in Tennessee and St. Francis and Big Lake in Arkansas; and resulted in sunken forests, such as the one discovered near present-day Blytheville, Arkansas (Johnston and Schweig 1996). Today, the New Madrid region remains seismically active and "...is shaken by small earthquakes on an average of every 48 hours..," though many are micro quakes below the threshold of human perception (Johnston 1996).

RESOURCES

Resources that would be used in implementing this concept include a museum, state park, public roads, and natural resources that directly reflect the impact of the 1811 - 1812 earthquake events in the Delta (please see Concept 3 map).

RESOURCES

1. New Madrid Historical Museum
2. Three points where the Reelfoot fault intersects the Mississippi River, near New Madrid and at Island #10
3. Reelfoot Lake; the Reelfoot Lake Museum; and the U.S. Fish and Wildlife Service's visitor center at Reelfoot Lake
4. Big Oak Tree State Park
5. The Obion Bluffs, in which fissure and landslide scars are visible, between Dyersburg, Tennessee, and Caruthersville, Missouri
6. St. Francis Sunken Lands Wildlife Management Area (Caraway, Arkansas)
7. Big Lake Natural Area (Mississippi County, Arkansas)



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Lower Mississippi Delta Region

HERITAGE STUDY

CONCEPT 3

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